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New record and distribution extension of *Melanemerella brasiliana* (Ulmer, 1920) (Ephemeroptera: Melanemerellidae) from Bahia, Brazil

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Abstract. *Melanemerella brasiliana* (Ulmer, 1920) occurs in São Paulo, Rio de Janeiro, and Espírito Santo states, Brazil. Here, we record it for the first time from the state of Bahia. The new record is based on nymphs collected from Serra Bonita Reserve, municipality of Camacan, Bahia.

Key words. Neotropics; mayfly; northeastern Brazilian; Atlantic Forest biome

The genus *Melanemerella* was first described in the family Ephemerellidae (Ulmer 1920), but its systematic position in the Ephemeroptera has changed several times since. Wang & McCafferty (1996) reviewed the holotype of *Melanemerella brasiliana* (Ulmer, 1920) and concluded that it belongs to the family Leptophlebiidae, based on morphological characters of the female adult, at the time the only known stage. Later, Molineri & Domínguez (2003) described the nymphal and eggs stages of this species, and based on their cladistic analysis, they concluded that *M. brasiliana* belongs to the Ephemerelloidea; they erected the family Melanemerellidae for this species. Ogden et al. (2009), confirmed the phylogenetic position within the Ephemerelloidea of Melanemerellidae, but its sister-group remains uncertain. Melanemerellidae is monotypic and endemic to Brazil, with records from the states of Rio de Janeiro, Espírito Santo, and São Paulo (Wang & McCafferty 1996, Molineri & Domínguez 2003, Henriques-Oliveira & Nessimian 2010). The male imago still unknown.

We collected *M. brasiliana* in Serra Bonita Reserve, municipality of Camacan, southern Bahia, Brazil (Fig. 1). This forest reserve is one of the last remaining fragments of high-altitude Atlantic Forest in the state. The reserve has a unique habitat with significant altitude gradients of native Atlantic Forest (200–1080 m) (Amorim et al. 2009).

Nymphs were collected with an aquatic entomological net. Four specimens were fixed in 80% ethanol and were deposited in the collection of the Laboratório de Organismos Aquáticos, Universidade Estadual de Santa Cruz (LOA/UESC MZUESC code: Eph0446):

Voucher material. Brazil, Bahia, Camacan, Reserva Particular do Patrimônio Natural Serra Bonita, river Chuchuzeiro, Dip Net, 1-IV-2011, 15°23′01.07″ S, 039°34′10.0″ W (geodetic datum: SAD69), elev. 813 m, col. Laboratório de Entomologia Aquática.

The identifications and information on the geographical distribution of species were consulted in Domínguez et al. (2006) and specific papers for species (Wang & McCafferty 1996; Molineri & Domínguez 2003; Henriques-Oliveira & Nessimian 2010). We identified our specimens as *M. brasiliana* by observing characteristics of the gills, mouth parts, legs, and abdomen (Fig. 2). The nymph of *Melanemerella* can be separated from all other genera of Ephemerelloidea by the following combination of characters: 1) lateral margins of submentum rounded; 2) lapial palpi 3-segmented; distal segment reduced; 3) maximum width of fore-femur equals maximum length, and with an acute median projection on leading edge; 4) middle coxae with a dorsal acute projection; 5) gills presents on segments 2–6, ventral lamellae of gills 2–5 bifid and festooned; 6) gills of segment 2 opercular; 7) paired posteromedial projections present on abdominal terga (Molineri & Domínguez 2003).

Melanemerella brasiliana was first recorded from the state of Espírito Santo by Ulmer (1920) in the original description. Unfortunately, no precise locality data was given as to where it was collected. Recently, Henriques-Oliveira & Nessimian (2010) recorded this species from Serra da Bocaina National Park, between the cities of São José do Barreiro, São Paulo state and Angra dos Reis, Rio de Janeiro state, and Molineri & Domínguez (2003) found it in municipally of Campos do Jordão, also São Paulo state. These previous records were from streams at altitudes from 400 to 1500 m (Henriques-Oliveira & Nessimian 2010) and from 1500 to 1620 m (Molineri & Domínguez 2003). The altitude where we collected this species was 813 m, also above 400 m. Nymphs of *M. brasiliana* are exclusive to lotic habitats and appear to have a preference for decaying leaf litter.

To date, *M. brasiliana* is know only from the Southeastern Region of Brazil (Ulmer 1920, Molineri & Domínguez 2003, Henriques-Oliveira & Nessimian 2010). Our new record is the first from Bahia and the Northeastern Region.

Melanemerella brasiliana is endemic to the Atlantic Forest

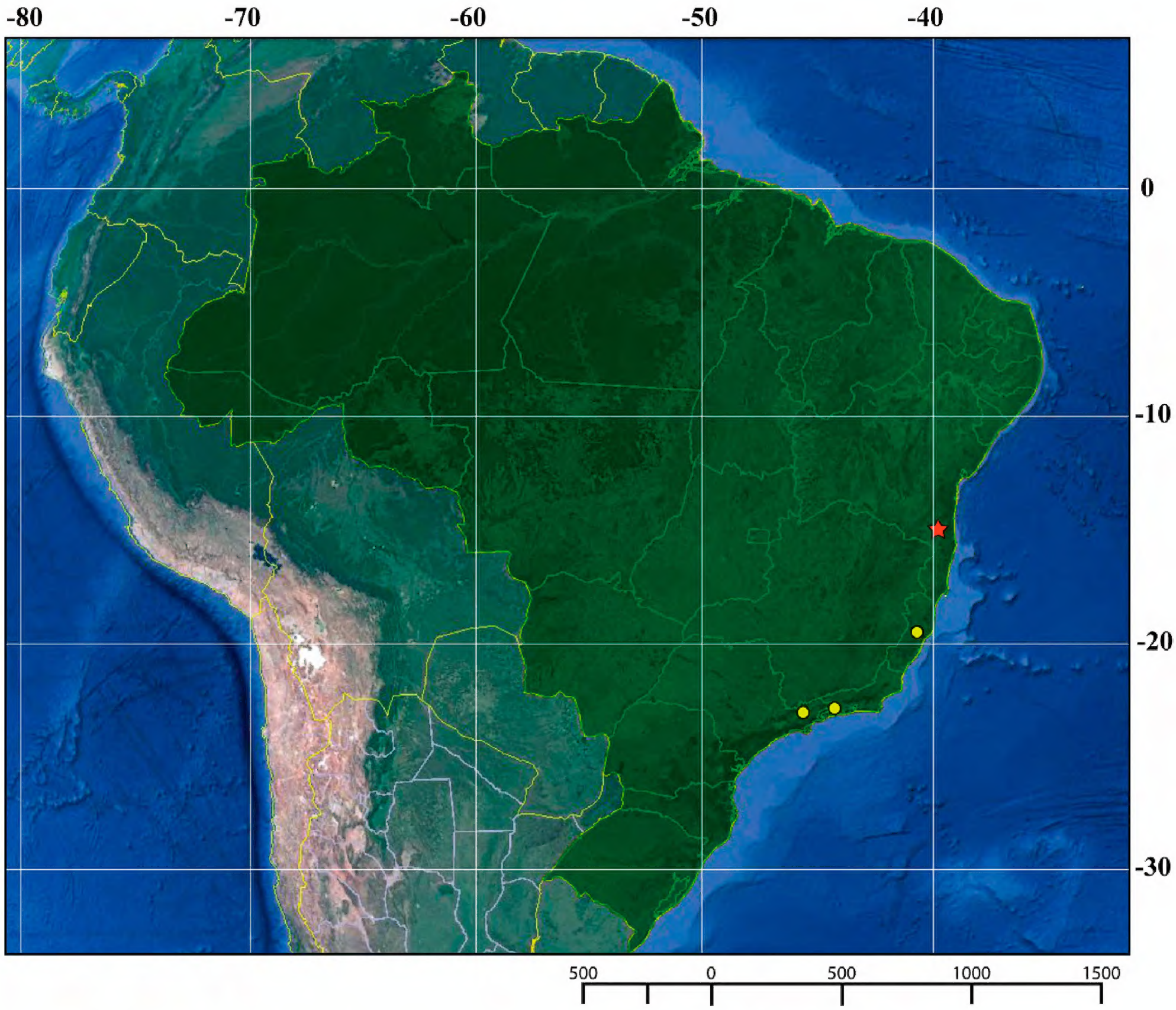

Figure 1. Records of *Melanemerella brasiliana* for Brazil: yellow circle = previously known records; red star = new record.

biome, known for its remarkable biodiversity, but under serious threat, with only 3% its original area remaining. Our new record of *M. brasiliana* from Bahia is an important discovery because it expands the known distribution of this species (and its family) into the Atlantic Forest.

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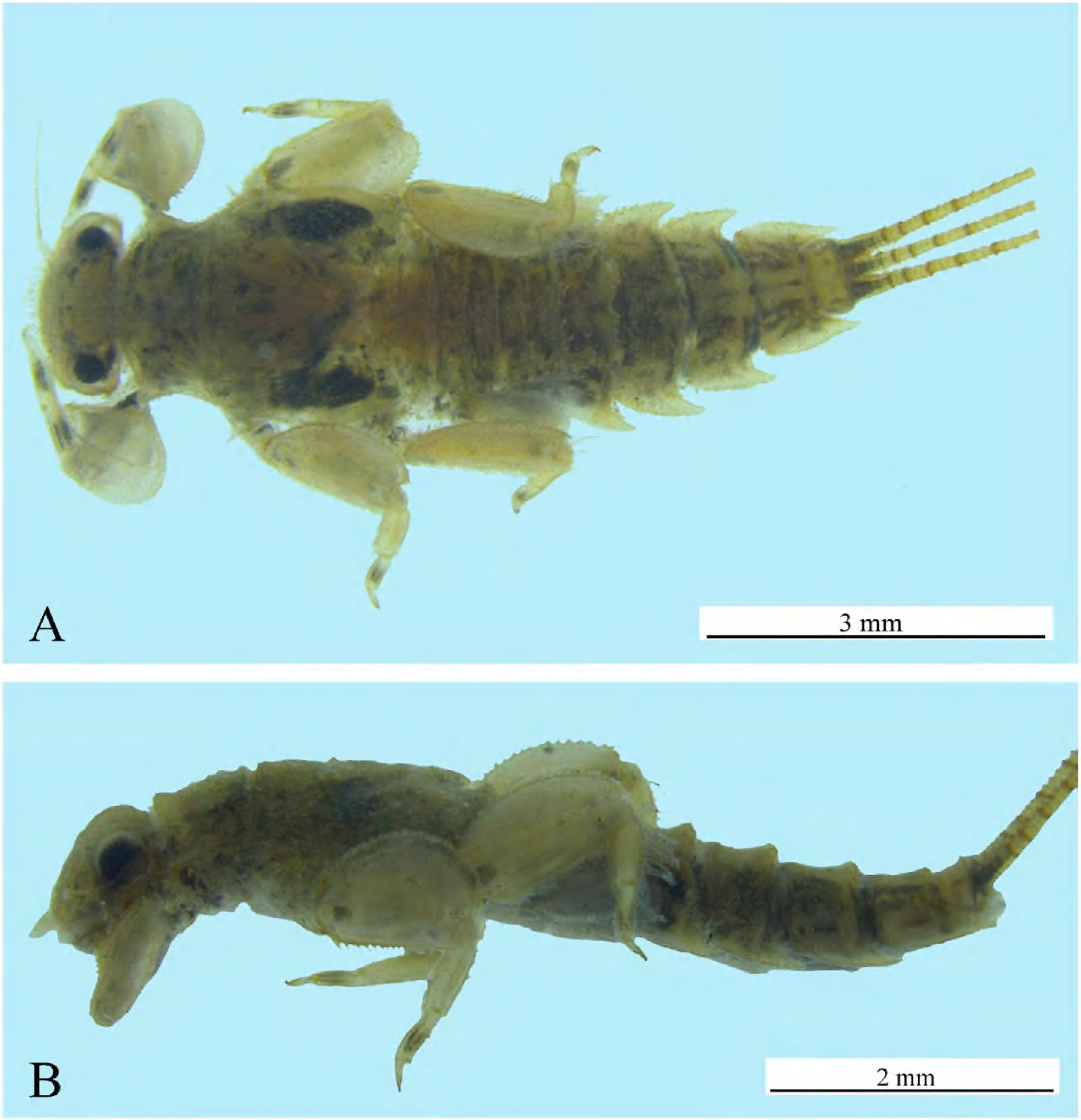

Figure 2. *Melanemerella brasiliana* habitus. **A.** Dorsal view. **B.** Lateral view. (Silva and Mariano photos)

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